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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/852,304	05/10/2001	Chan Kim	11349-P66638US0	4724

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EXAMINER

MURPHY, RHONDA L

ART UNIT	PAPER NUMBER
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2667

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/852,304

Applicant(s)

KIM ET AL.

Examiner

Rhonda L Murphy

Art Unit

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 6-9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to because element **"523"** should be designated as **"Transmitting Multiplexing Unit"**, per the specification, page 13 line 26. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **'52'** is not labeled in Figure 5, to represent the transmitting unit. Corrected

drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1, 3 – 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (US 6,636,527), in view of Uchida et al (US 6,728,248).

Regarding claim 1, Lee teaches a cell receiving means (Fig. 3, element 6) for transferring an ATM cell through receiving UTOPIA interfacing means (col. 4, lines 22-23) to external (col. 4, lines 48-51; **the utopia transmitter receives ATM cells transferred from the external**, thus receiving UTOPIA transferred to the external) and transferring message PLOAM (Physical Layer Operation and Maintenance) cell to a message processing means (element 77 of Fig. 6A, which is a component of element 7

of Fig. 3; col. 4, lines 23-32); a cell transmitting means for loading the ATM cell received through a transmitting UTOPIA interfacing means (Fig. 4, col. 4, lines 48-49) in a granted slot; and message processing means for setting internal signals by processing the received message (col. 6, lines 54-59; the internal signal is represented by the **information message**), and transferring the message requested through the cell transmitting means.

Lee fails to teach transferring in upstream by loading the message in payload of the PLOAM cell when the PLAOM cell is transmitted.

However, Uchida teaches transferring in upstream by loading the message in payload of the PLOAM cell when the PLAOM cell is transmitted (col. 5, lines 55-65).

In view of this, having the system of Lee and then given the teaching of Uchida, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Lee, transferring in upstream, so as to allow the optical line terminal to control the traffic and avoid possible collisions between other transmitting units.

Regarding claim 3, Lee further teaches the cell receiving means reflecting difference information between the byte clock obtained during byte delineation and actual byte aligned phase transmitting timing (col. 6, lines 11-21), reflects the byte delineation information upstream frame time delay so that the round-trip delay has a constant value regardless of byte delineation changing whenever the transceiver is turned on without assigned time delay value's change resulted from ranging (col. 5, lines 35-47).

Regarding claim 4, Lee teaches a cell and byte delineating means for receiving byte stream from an external serial/parallel transformer and delineating the cell and the byte (Fig. 6b element **71**, col. 6, lines 11-15); a descrambling means for receiving a scrambled cell stream from the cell and byte delineating means and descrambling data with synchronization to the received data (Fig. 6b element **72**, col. 6, lines 22-23); a BIP (Bit Interleaved Parity) comparing means for computing a BIP value for the data received from the descrambling means for (col. 5, lines 20-28; col. 6, lines 22-30), a frame synchronizing means for synchronizing the frame by finding a location of the PLOAM cell and a frame starting point for the data received from the descrambling means (col. 5, lines 34-38); a receiving demultiplexing means for demultiplexing the ATM cell, the PLOAM cell, and a grant value and a message received thereto from the data transferred from the frame synchronizing means (Fig. 6a, it is known in the art that the cells, grant value and message is demultiplexed); a look-up processing means for reading the table depending on a VPI (Virtual Path Identifier) by using the ATM cell transferred from the receiving demultiplexing means (it is known in the art that a VPI of an ATM cell is used); a receiving UTOPIA interfacing means for storing the ATM cell transferred from the look-up processing means and transferring the stored ATM cell in response to an external request (col. 6, lines 38-42).

Lee fails to teach grant decoding and grant tables.

However, Uchida teaches a grant decoding means for decoding the grant value received from the receiving demultiplexing means (col. 16, lines 26-34); and grant table for receiving and storing a writing signal from the grant decoding means (34-40).

In view of this, having the system of Lee and then given the teaching of Uchida, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Lee, by incorporating the grant decoding means and grant table, in order to store grant values corresponding to the Optical Network Units (ONU) and identify which ONU is permitted to send a cell.

Regarding claim 5, Lee further teaches a header error inspecting means for inspecting header error for the ATM transferred from the receiving demultiplexing means (col. 4, lines 15-17); a dechurning means for receiving ATM related information from the look-up processing means (col. 1, lines 52-65; thus it is obvious to provide dechurning means when churning means are provided) and, if necessary, dechurning the payload of the received ATM and changing a churning key (see previous statement); a memory arbitrating and interfacing means for arbitrating connection table reading and writing requests from the message receiving processing means processing the received message from external (col. 6, lines 66-67; col. 7, lines 1-10; Fig. 6a **memory device 79**) and a CPU (Central Processing Unit) interface to process reading and writing (Fig. 6a, element **5**); and a dual-port memory for storing information for VPI receiving and dechurning by using the VPI as an address (Fig. 6a, **memory device 79**).

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee and Uchida as applied to claim 1 above, and further in view of Yuki (US 6,778,557).

Regarding claim 2, Lee and Uchida teach a cell transmitting means that is capable of using an arbitrary MAC (Medium Access Control) technique (Lee, col. 3, lines 64-66).

Lee and Uchida fail to teach enabling arbitrary data loaded in a mini-slot.

Yuki teaches enabling arbitrary data loaded in a mini-slot by outputting an enable signal for mini-slot payload and receiving a byte input signal (col. 27, lines 17-20).

In view of this, having the system of Lee and Uchida and then given the teaching of Yuki, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Lee and Uchida, by enabling data loaded in a mini-slot, so as to improve communications efficiency and reduce buffer memory requirements (col. 29, lines 31-33).

Allowable Subject Matter

5. Claims 6-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 6, Prior art fails to teach a transmitting multiplexing means for determining category of the cell transferred via a grant table by the frame count and the slot counter of internal.

Regarding claim 8, Prior art fails to teach a transmitting message processing means for receiving a message insertion instruction from the transmitting multiplexing means and generating a predetermined message depending on a message transmitting request from various blocks.

Conclusion


6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art is cited: Delay Adjustment Unit and Method, Optical Network Unit, and Communication System, Toyoda et al. US 6,647,210; Ascending Transmission Speed Controlling Method and Communication System in ATM-PON System, Hijikata et al. US 6,633,541; Point-to-Multipoint Communication System, Yuki et al, US 6,778,557; Message Writing Apparatus, Message Writing Method, Message Readout Apparatus, Message Readout Method, Memory Address Control Circuit for Writing of Variable-Length Message and Memory Address Control Circuit for Readout of Variable-Length Message, Yamamori et al, US 2002/0057697; Method For Requesting Grant For MAC Protocol In PON, Kim et al, US 6,721,504; ONU Function Processing Apparatus In ATM-PON System, Lee et al., US 6,614,759; Transmission Apparatus Automatically Acquiring Identifying Information and Independent Measuring Propagation Delay, Karasawa, US 6,665,315.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda L Murphy whose telephone number is (571) 272-3185. The examiner can normally be reached on Monday - Friday 8:00 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

rlm


RICKY NGO
PRIMARY EXAMINER
10/01/04